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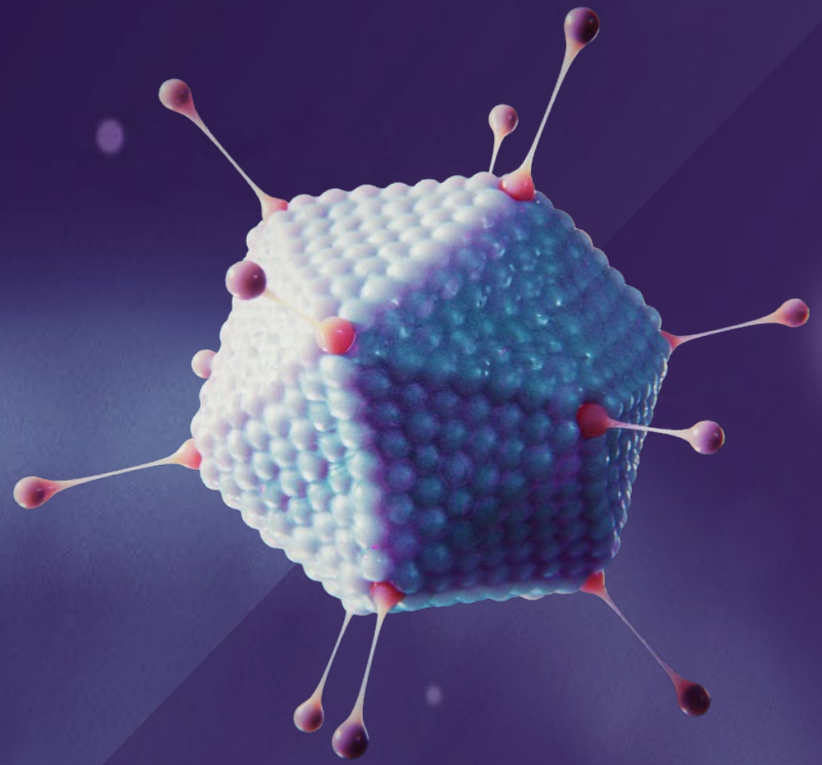

42nd Annual J.P. Morgan Healthcare Conference

Helen Sabzevari, PhD
President and CEO

January 10, 2024

Nasdaq: PGEN

Forward-looking Statements

Some of the statements made in this presentation are forward-looking statements. These forward-looking statements are based upon the Company's current expectations and projections about future events and generally relate to plans, objectives, and expectations for the development of the Company's business, including the timing and progress of preclinical studies, clinical trials, discovery programs, product candidate approval and commercialization, and related milestones, the promise of the Company's portfolio of therapies, and in particular its CAR-T and AdenoVerse therapies. Although management believes that the plans and objectives reflected in or suggested by these forward-looking statements are reasonable, all forward-looking statements involve risks and uncertainties, including the possibility that the timeline for the Company's clinical trials, product candidate approvals or plans for commercial launch of might be impacted by economic conditions, the COVID-19 pandemic or other factors, and actual future results may be materially different from the plans, objectives and expectations expressed in this presentation. The Company has no obligation to provide any updates to these forward-looking statements even if its expectations change. All forward-looking statements are expressly qualified in their entirety by this cautionary statement. For further information on potential risks and uncertainties, and other important factors, any of which could cause the Company's actual results to differ from those contained in the forward-looking statements, see the section entitled "Risk Factors" in the Company's most recent Annual Report on Form 10-K and subsequent reports filed with the Securities and Exchange Commission.

This presentation contains market data and industry statistics and forecasts based on studies and clinical trials sponsored by third parties, independent industry publications and other publicly available information. Although Precigen believes these sources are reliable, it does not guarantee the accuracy or completeness of this information and has not verified this data.

All of the pharmaceutical products described in this presentation are investigational new drugs, which are currently undergoing pre-clinical and/or human clinical trial testing. As a result, none of them have had their safety or efficacy established or are approved by the U.S. Food and Drug Administration or any other regulatory agency.

All information in this presentation is as of the date of its cover page, and Precigen undertakes no duty to update this information unless required by law.

Precigen's strategy is designed to generate value over time based on continued success for the AdenoVerse and UltraCAR-T platforms

BLA filing and commercial readiness for lead asset	Diversify clinical pipeline based on unmet need and platform success	Next generation cell & gene therapies
Lead asset, PRGN-2012, preparing for BLA submission and potential commercialization in RRP	PRGN-2009 in HPV-associated cancer indications Potential expansion of PRGN-2012 in genital warts	Follow-on strategy for next generation of the UltraCAR-T and AdenoVerse platforms Potential for best-in-class CD19 targeted UltraCAR-T
Near Term	Near to Mid Term	Ongoing

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Precigen is deploying novel gene & cell therapeutic approaches to address high unmet healthcare needs

AdenoVerse™ Immunotherapy

Novel gene therapy platform to train and amplify the immune system *in vivo* (from WITHIN the body)

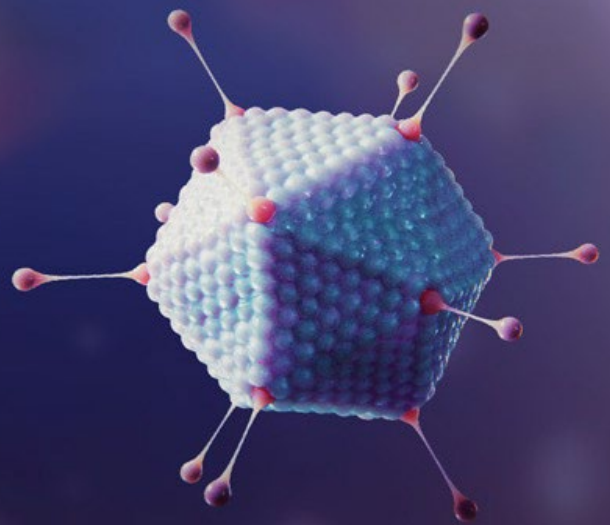
Large payload capacity

Low seroprevalence in humans

Ability for repeat administration

Durable antigen-specific immune response

Highly productive manufacturing process



Training the immune system to fight disease through *in vivo* and *ex vivo* activation

UltraCAR-T®

Novel cell therapy platform to engineer the immune system *ex vivo* (from OUTSIDE the body) rapidly with overnight manufacturing

Non-viral multi-gene delivery

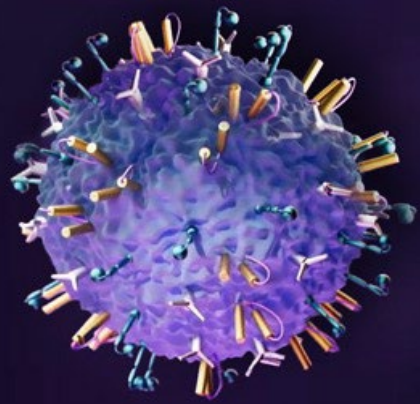
Non-exhausted, stem-like T cell phenotype

Higher antigen-specific expansion

Enhanced *in vivo* persistence

Ability to deplete with kill switch

Overnight manufacturing process at the hospital



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Precigen pipeline

Product	Target	Indication	DISCOVERY	PRECLINICAL	PHASE 1	PHASE 1B	PHASE 2	PHASE 3
ADENOVERSE IMMUNOTHERAPY								
PRGN-2012	HPV 6/11	RRP	Breakthrough Therapy Designation, Orphan Drug Designation					
PRGN-2009 (+pembrolizumab)	HPV 16/18	OPSCC/Head & Neck Cancer						
PRGN-2009 (+pembrolizumab)	HPV 16/18	R/M Cervical Cancer				Phase 2 **IND** cleared		
ULTRACAR-T								
PRGN-3005	Unshed MUC16	Ovarian Cancer						
PRGN-3006	CD33	R/R AML, MDS	Fast Track Designation, Orphan Drug Designation					
PRGN-3007	ROR1	ROR1^{+} Hematological & Solid Tumors						
PRGN-3008	CD19	B-cell Malignancies						

ACRONYMS: RRP=recurrent respiratory papillomatosis; OPSCC=oropharyngeal squamous cell carcinoma; R/M=recurrent/metastatic; R/R=relapsed or refractory; AML=acute myeloid leukemia; MDS=myelodysplastic syndrome; ROR=receptor tyrosine kinase-like orphan receptor; HPV=human papillomavirus; MUC=mucin

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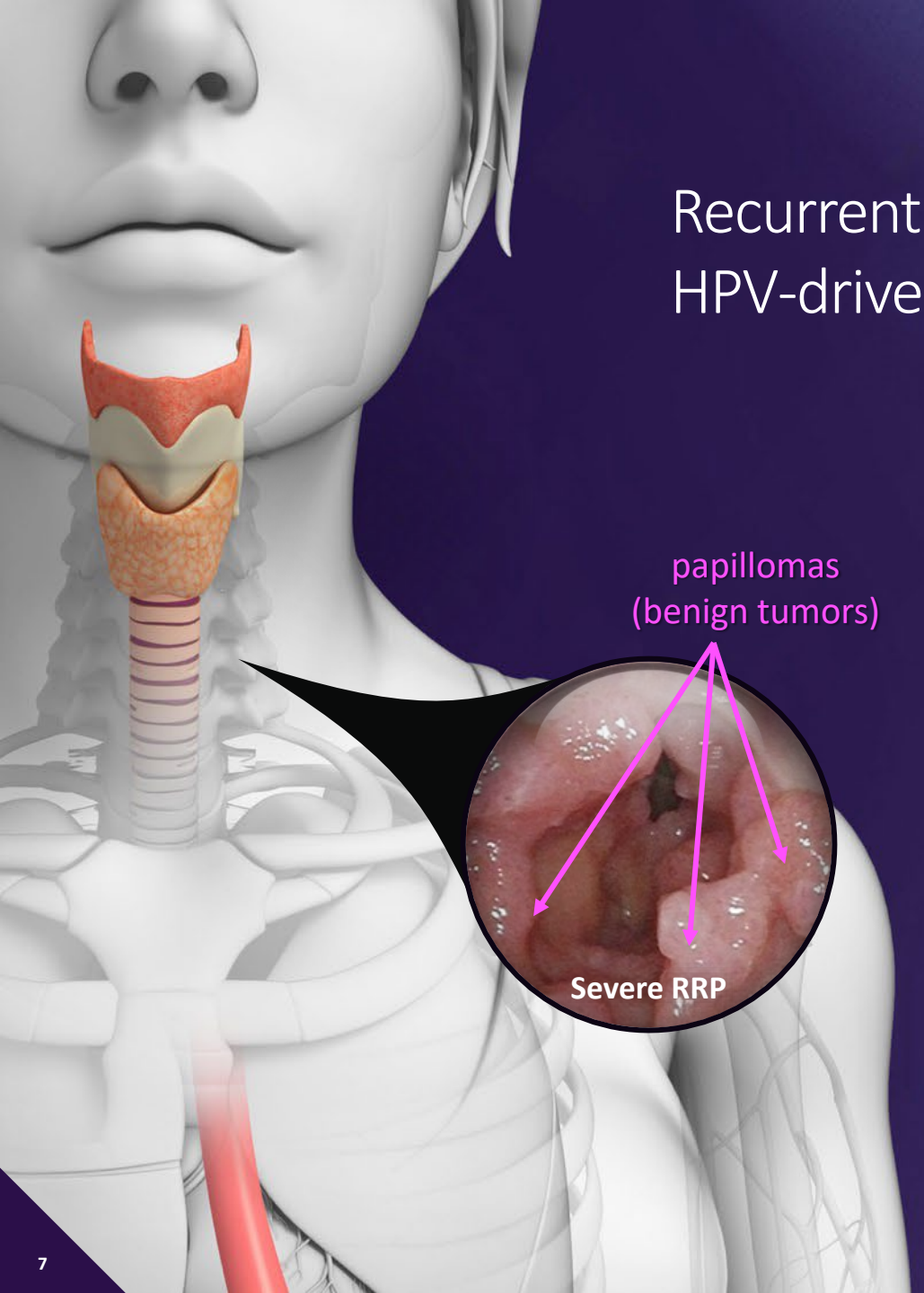
PRGN-2012 for Recurrent Respiratory Papillomatosis

Recurrent respiratory papillomatosis (RRP) is a rare HPV-driven disease with no FDA-approved therapeutic



- RRP is a recurring benign HPV-mediated tumor on the larynx that is mainly treated surgically
- HPV6 and HPV11 infections are the drivers of the disease
- Adult onset RRP is driven by sexual transmission and juvenile onset RRP is typically transmitted during birth
- RRP is potentially life-threatening especially if pulmonary or malignant transformation occurs
- RRP can cause severe voice disturbance, airway compromise, fatal pulmonary lesions, and invasive cancers

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There has **never been an FDA-approved therapeutic option for the RRP patient community**, and we are incredibly hopeful that this will change in the near future. Our community faces **ongoing risks from hospitalizations and repeat surgeries,** coupled with daily quality-of-life challenges, such as obstructed breathing, difficulties swallowing, and impaired speech, and our community bears a **tremendous financial burden from the significant lifetime costs** to patients and their families affiliated with this disease.

Kim McClellan
President
Recurrent Respiratory
Papillomatosis Foundation

RRPF
RECURRENT RESPIRATORY
PAPILLOMATOSIS FOUNDATION

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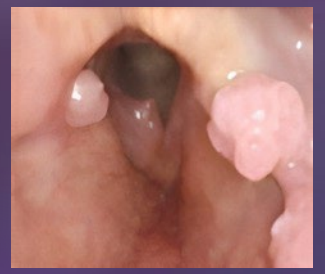
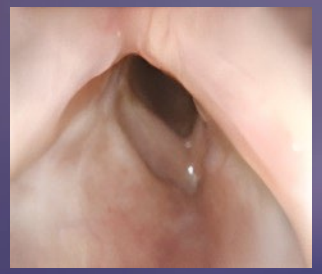
PRGN-2012 targets HPV6/11 infected cells

- Gorilla adenoviral vector with the ability for repeat injections
- Designed to elicit T cell mediated immune responses against papilloma cells infected with HPV6 or HPV11
- Breakthrough Therapy and Orphan Drug Designations granted by the FDA

Actual patient before treatment



Same patient after treatment



PRGN-2012 AdenoVerse

1 PRGN-2012 administered to patient via subcutaneous injection

2 Vector delivers payload to host cell

3 Antigen response elicits therapeutic T cell activation

4 Influx of activated T cells are directed into the papillomas

host cell

antigen presentation

T cell

activated T cells

papilloma

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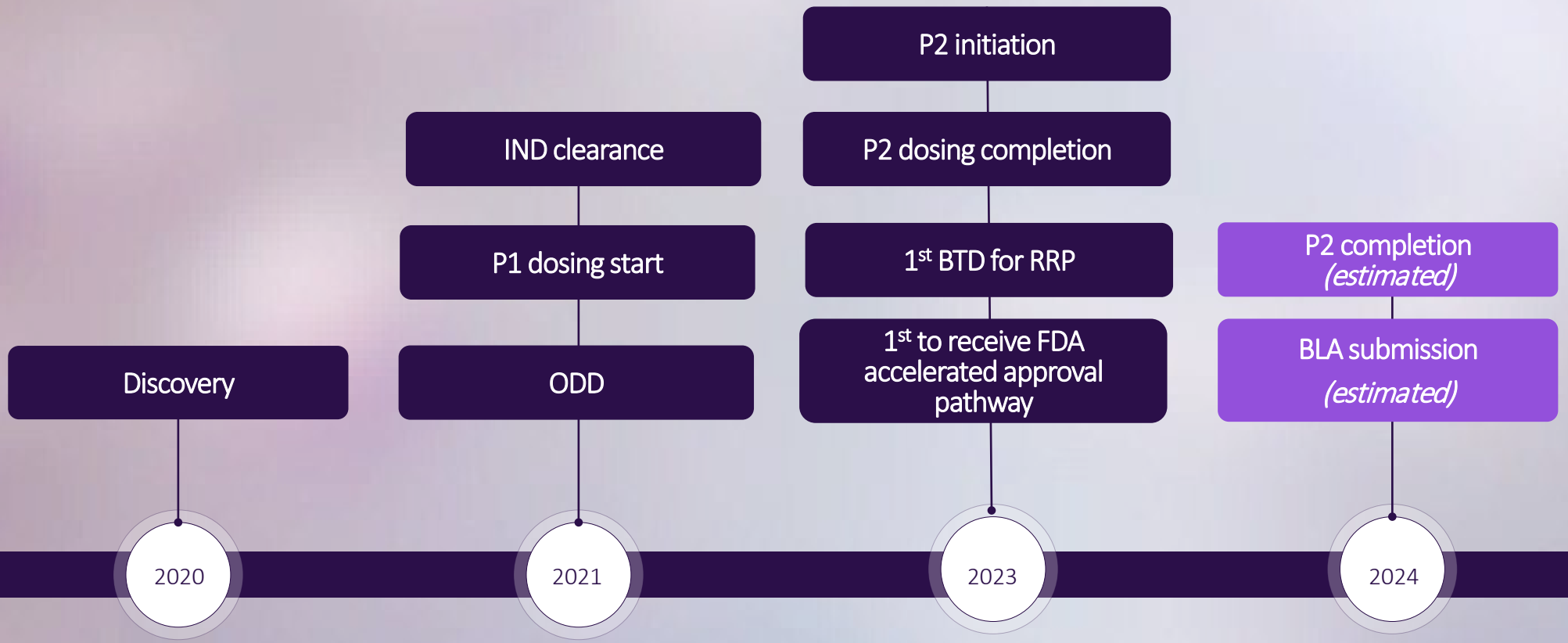
Precigen spearheaded the innovation of a new therapeutic option for RRP patients and is leading clinical and regulatory development in RRP



ACRONYMS: IND=investigational new drug application; ODD=orphan drug designation; BTD=Breakthrough Therapy Designation; FDA=Food and Drug Administration; P1=Phase 1; P2=Phase 2; RRP=recurrent respiratory papillomatosis; BLA=biologics license application

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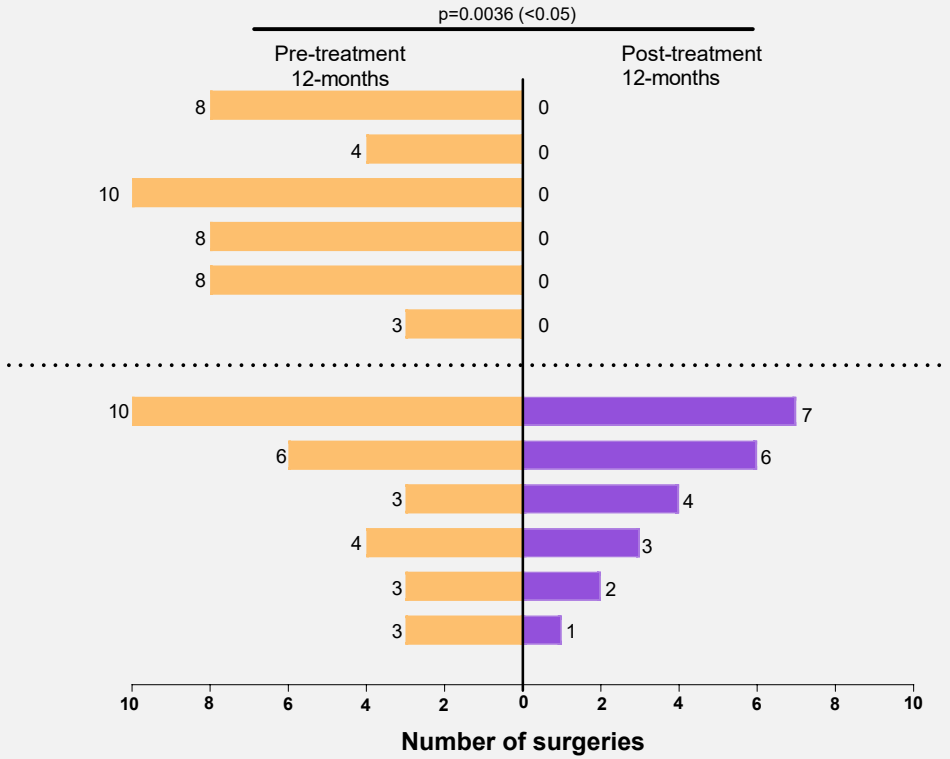
PRGN-2012 clinical data has demonstrated strong efficacy, safety and durability of response

50% of patients with durable, ongoing complete response at ≥ 2 years

83% of patients with reduction in need for RRP surgeries

Phase 1 Results: RRP Surgeries Pre- vs. Post-Treatment



- Favorable safety profile (No DLTs, No TRAEs greater than Grade 2)
- Strong response with significant reduction in surgeries
  - **50% of patients in durable complete response (CR)**
  - **83% of patients with reduction in need for RRP surgeries**

- Eligibility
  - Adult patients with 3 or more RRP surgeries in prior year
- Dosing
  - Four subcutaneous PRGN-2012 administrations
- Enrollment Status
  - Phase 1: N=12*; dosing and 1 year follow up complete
  - Phase 2: N=23; dosing complete; follow up ongoing
- **Phase 2 data anticipated in Q2 2024**
- **BLA submission under accelerated approval pathway planned for 2H 2024**

* Patients treated at recommended Phase 2 dose

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PRGN-2012 is on track for potential commercial launch in 2025

Preparing for BLA submission

- Phase 2 study to be completed in Q2 2024
- BLA submission for the treatment of RRP planned for 2H 2024
- Potential commercial launch planned in 2025

Significant potential market opportunity

- ~15-20K US RRP patients

- >125K ex-US RRP patients

- Concentrated prescriber base (laryngologists)

Preparing for successful commercial launch in 2025

- **Marketing**
  - Market research with clinicians, patients and caregivers
- **Medical Affairs**
  - Engaging with KOLs and patient support groups
- **Market Access/Distribution**
  - Payer engagement
  - Establishing specialty distribution

Sources: Derkay et al. Task Force on recurrent respiratory papillomas. 1995; Armstong et al. Incidence and Prevalence of Recurrent Respiratory Papillomatosis among Children. 2000; Marsico et al. Estimating the Incidence and Prevalence of Juvenile-Onset Recurrent Respiratory Papillomatosis. 2014, accessed October 2023; Discussions with Laryngologists, General Otolaryngologists & Pediatric Otolaryngologists, Precigen commissioned research in Nov-Dec 2023; RRP Foundation website. World Health Organization. HPV vaccination coverage database; World Bank; Yin et al. A national cross-sectional study on the influencing factors of low HPV vaccination coverage in mainland China. 2022.

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Assessing the key characteristics of a potential RRP product; Selected feedback from KOLs and laryngologists

Reducing Surgical Burden is the #1 Unmet Need	Durability of Response	Preferred Route of Administration	Reassuring Safety
"All we can do today is surgery, it's like mowing the lawn with RRP. We get rid of it then it comes back and we have to mow the lawn again. All of my patients would be interested in a new therapeutic treatment option."	*"It is nice to see that durability of response is now out to 24 months for all patients that had a complete response in the Phase 1 study."*	*"It's four subcutaneous doses, I imagine that patients would prefer a SQ injection."*	*"Anything that can reduce the number of surgeries is very positive, and it is well tolerated. It is very appealing."*
KOL	Laryngologist	Laryngologist	Laryngologist

Primary Research with N=5 KOLs, N=12 HCPs, conducted in November & December 2023. Feedback is based on a target product profile that is consistent with current data and characteristics of PRGN-2012. If PRGN-2012 is approved by FDA, the approved product labeling may not be consistent with the target product profile used to obtain feedback. The phase 2 study of PRGN-2012 is ongoing and the final results are not expected to be available until Q2 2024.

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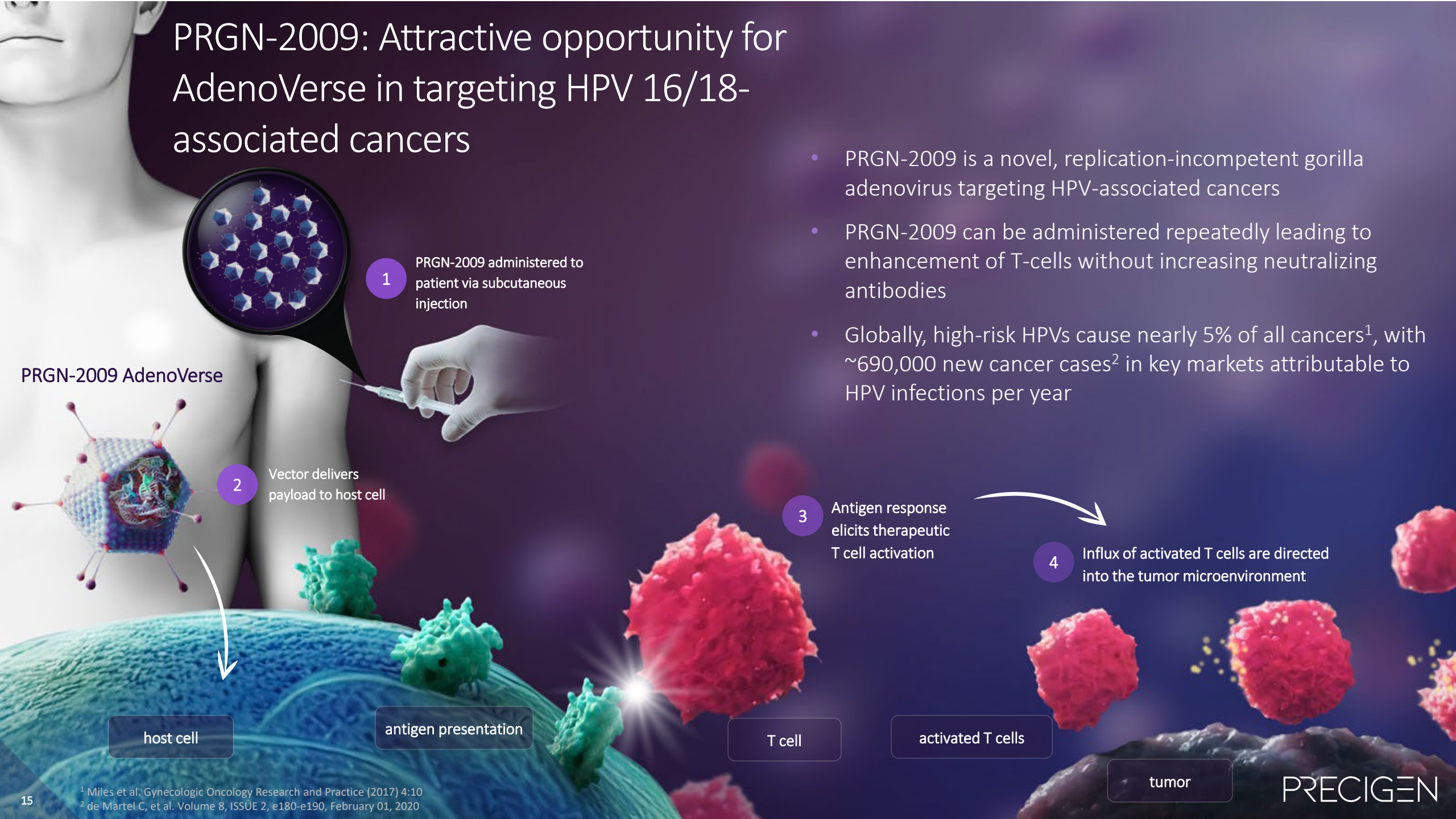
PRGN-2009 for HPV-associated Cancers

PRGN-2009: Attractive opportunity for AdenoVerse in targeting HPV 16/18-associated cancers

- PRGN-2009 is a novel, replication-incompetent gorilla adenovirus targeting HPV-associated cancers
- PRGN-2009 can be administered repeatedly leading to enhancement of T-cells without increasing neutralizing antibodies
- Globally, high-risk HPVs cause nearly 5% of all cancers[1], with ~690,000 new cancer cases[2] in key markets attributable to HPV infections per year



[1] Miles et al. Gynecologic Oncology Research and Practice (2017) 4:10
[2] de Martel C, et al. Volume 8, ISSUE 2, e180-e190, February 01, 2020

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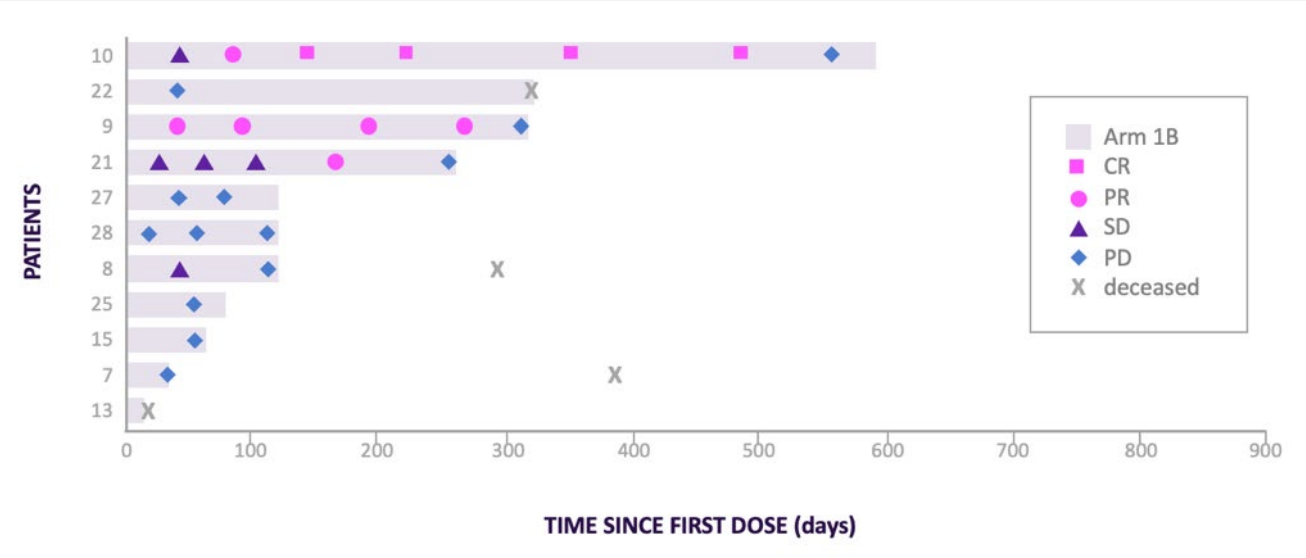
Potential of AdenoVerse platform from rare disease to oncology indications

PRGN-2009: Promising preliminary safety and efficacy data in HPV-associated cancers

Phase 1 Study in R/M HPV-associated Cancers

PRGN-2009 as Monotherapy (Arm 1A) and in Combination with Checkpoint Inhibitor (bintrafusp alfa) (Arm 1B)

Clinical Responses (PRGN-2009 Combination Arm)



- Favorable safety profile with no DLTs
- **30% ORR (1 CR, 2 PR) including checkpoint blockade resistant patients[3]**
- PRGN-2009 induced robust HPV-specific T cell responses

PRGN-2009 Phase 2 Studies

Phase 2 study in newly diagnosed OPSCC

- Phase 2 study of PRGN-2009 + pembrolizumab is currently enrolling patients

Phase 2 study in r/m cervical cancer

- HPV infection responsible for 90% of cervical cancers cases[1]
- Response rates for checkpoint inhibitors in low teens in 2L cervical cancer represents attractive opportunity[2]
- Phase 2 randomized, open-label study of PRGN-2009 + pembrolizumab in r/m cervical cancer
  - Prior pembrolizumab treated patients eligible for study
  - IND cleared by FDA in 2023
  - Study initiation anticipated in Q1 2024

ACRONYMS: OPSCC=oropharyngeal squamous cell carcinoma; R/M=recurrent/metastatic; HPV=human papillomavirus; DLT=dose limiting toxicities; ORR=objective response rate; CR=complete response; PR=partial response

[1] Division of Cancer Prevention and Control, Centers for Disease Control and Prevention (https://www.cdc.gov/cancer/hpv/basic_info/index.htm); [2] Chung HC et al., Journal of Clinical Oncology 2019 ; [3] Floudas CS et al., 2023 ASCO Annual Meeting

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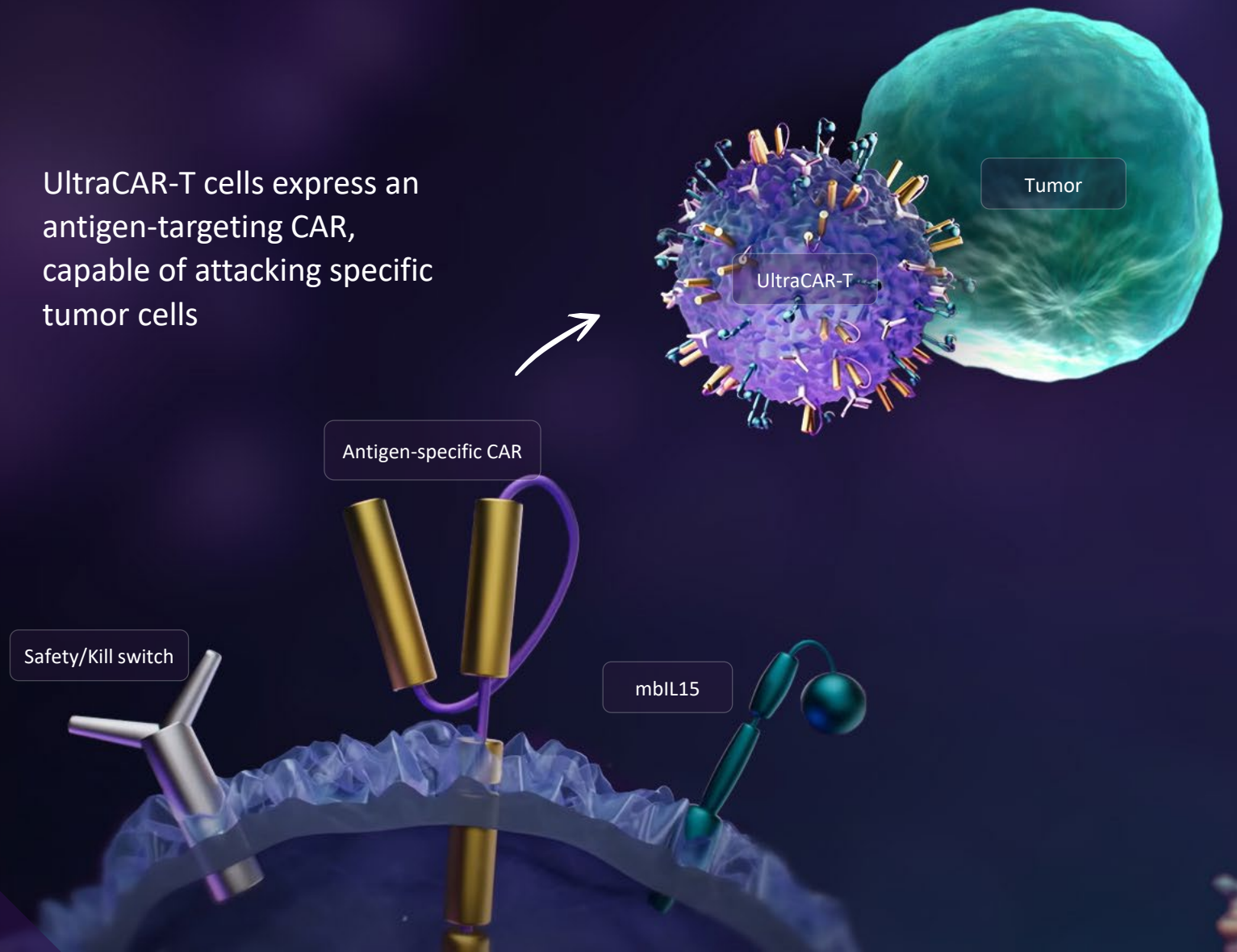
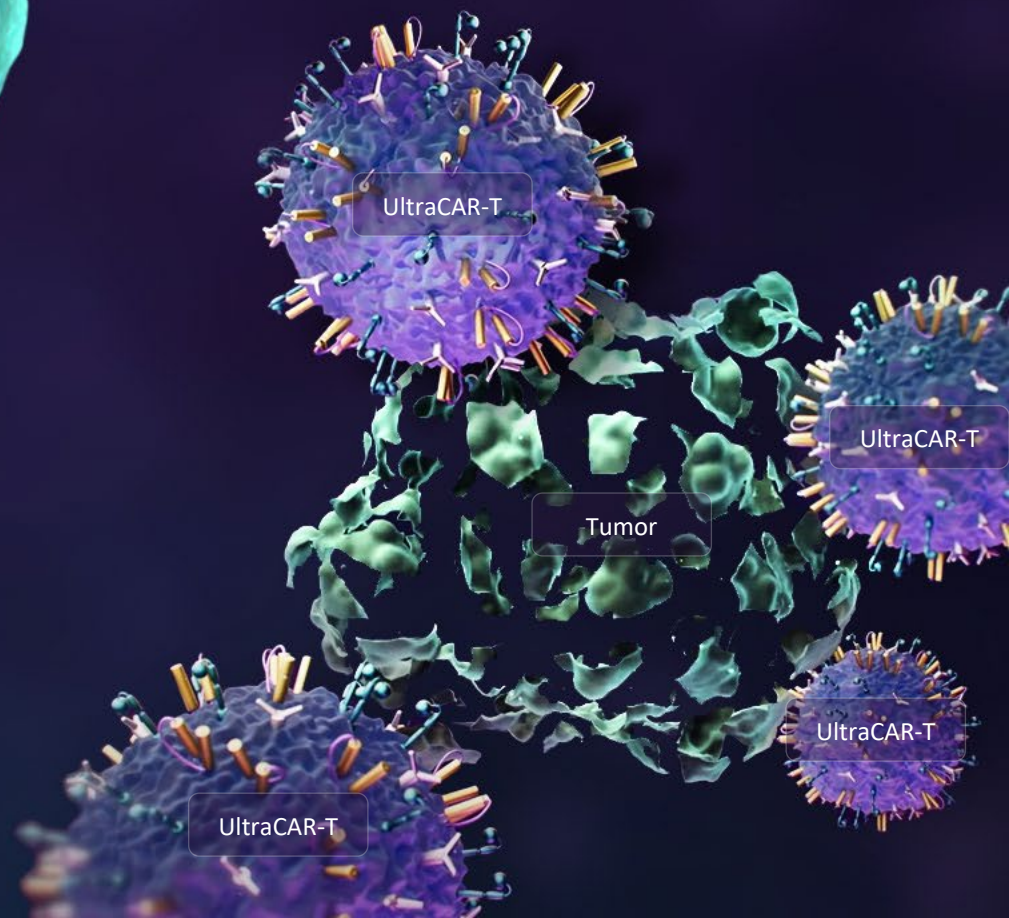
UltraCAR-T Platform

UltraCAR-T
Design and mechanism of action

UltraCAR-T cells express an antigen-targeting CAR, capable of attacking specific tumor cells

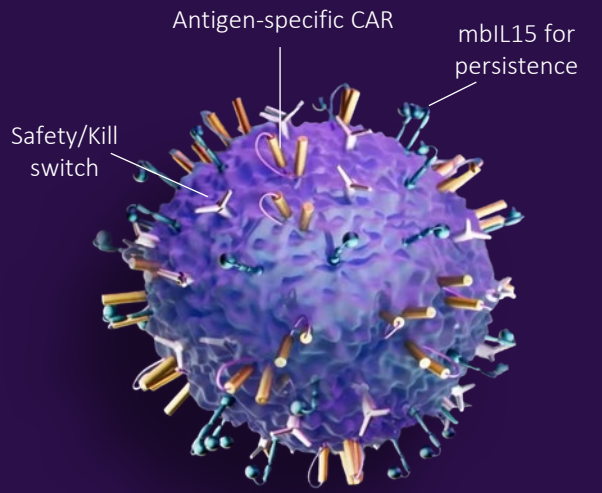


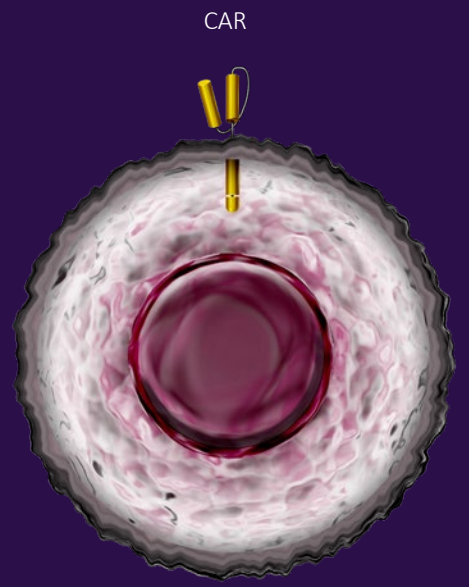
After infusion, UltraCAR-T cells kill cancer cells when they recognize the tumor-associated antigen expressed by the tumor



Precigen's UltraCAR-T is the leading platform addressing safety and manufacturing shortcomings of conventional CAR-T therapies at a lower cost

UltraCAR-T		Conventional CAR-T
✓	Non-viral design	X
✓	Safety/kill switch	X
✓	*In vivo* persistence/durability	X
✓	Overnight manufacturing	X
✓	Same day quality control release	X
✓	Reduced manufacturing costs	X





The information presented in this table is based on our internal assessment of the state of general development of such technologies

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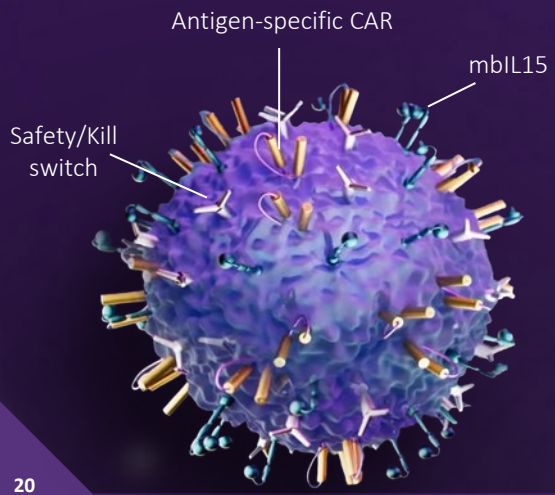
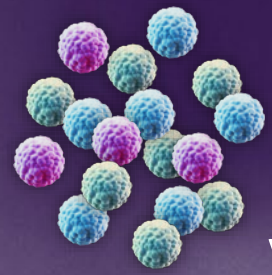
UltraCAR-T Platform

Overnight, decentralized manufacturing process and next-day infusion significantly reduces wait time for autologous CAR-T treatment

- Proprietary UltraPorator® Automated System
  - Rapid, high efficiency gene transfer protocol
- Non-viral multi-gene delivery
- Overnight manufacturing
- Same day QC testing & release
- Uniform, multigenic cell product
- No *ex vivo* T cell activation or expansion



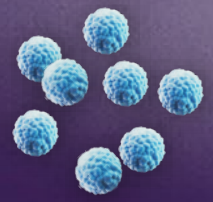
1 **Leukapheresis**

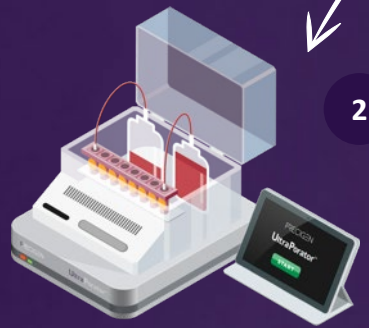


Leukocytes

Non-viral plasmid DNA

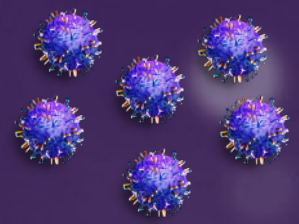
Unmodified T cells





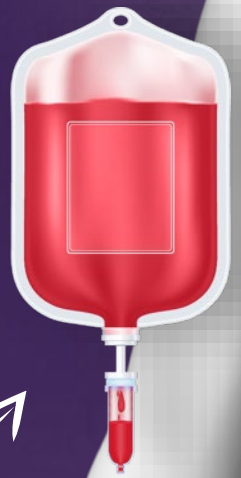
2 **Electroporation**
Up to 4bn T cells electroporated <12 min

UltraPorator

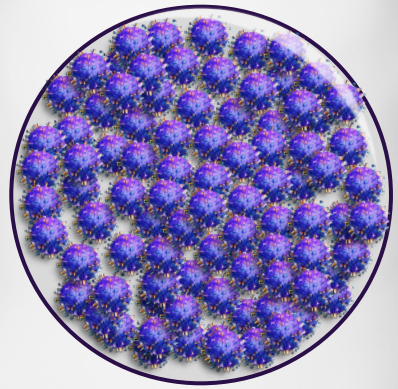


UltraCAR-T cells

3 **UltraCAR-T Infusion**
Manufacturing, QC release and infusion are completed in **ONE DAY**



4 ***In vivo* Expansion**
UltraCAR-T cells expand in the patient



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UltraCAR-T pipeline

Product	Target	Indication	DISCOVERY	PRECLINICAL	PHASE 1	PHASE 1B	PHASE 2	PHASE 3
ULTRACAR-T								
PRGN-3005	Unshed MUC16	Ovarian Cancer						
PRGN-3006	CD33	R/R AML, MDS			Fast Track Designation, Orphan Drug Designation			
PRGN-3007	ROR1	ROR1+ Hematological & Solid Tumors						
PRGN-3008	CD19	B-cell Malignancies						

ACRONYMS: R/R=relapsed or refractory; AML=acute myeloid leukemia; MDS=myelodysplastic syndrome; ROR=receptor tyrosine kinase-like orphan receptor; HPV=human papillomavirus; MUC=mucin

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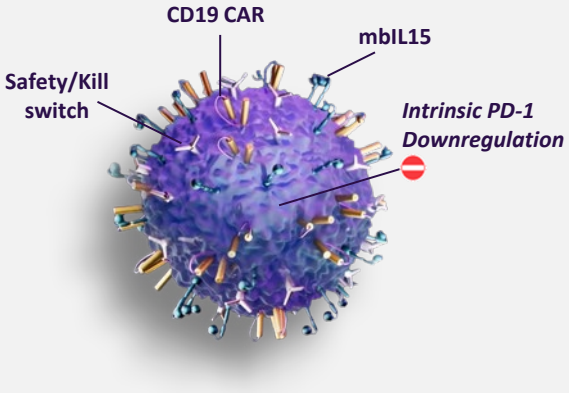
Preclinical CD19 UltraCAR-T

CD19 UltraCAR-T has potential to be best-in-class CAR-T targeting CD19

Significant opportunity in CD19 CAR-T space

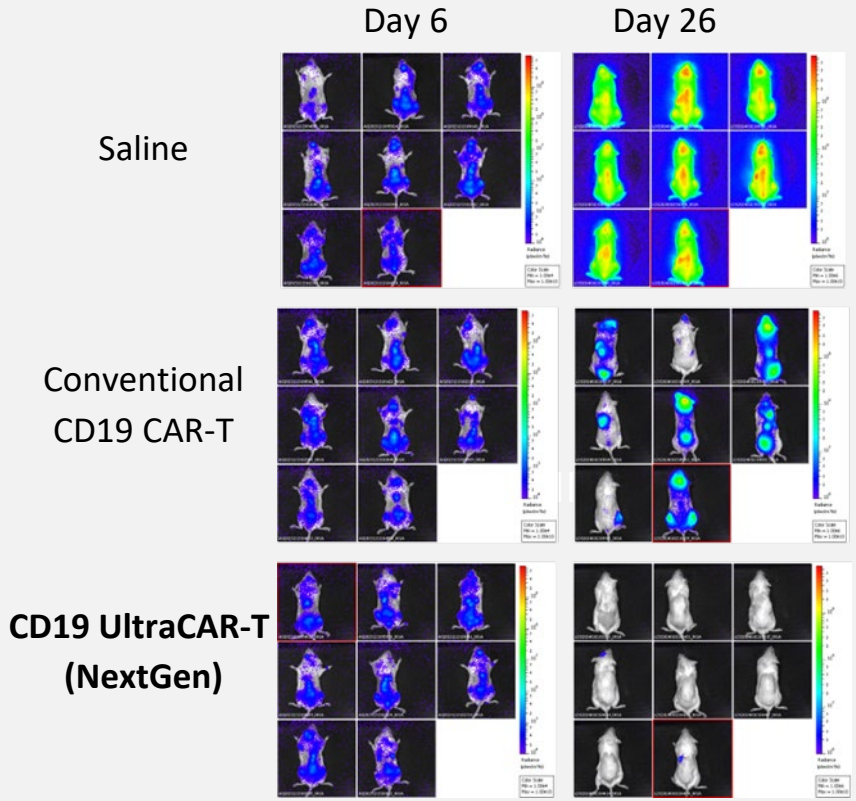
- **Next generation UltraCAR-T is engineered to address the limitations of conventional CD19 CAR-T therapies**
  - Poor CAR-T expansion and persistence
  - Potential for high toxicity and lack of safety switch
  - Risk of malignant transformation associated with lenti and retroviral vectors
  - Long turnaround times
  - High cost of manufacturing and treatment



NextGen CD19 UltraCAR-T with intrinsic PD-1 blockade showed significant improvement compared to conventional CD19 CAR-T in preclinical testing

In addition, CD19 UltraCAR-T has potential to be first and best-in-class CAR-T targeting **autoimmune diseases**

CD19 UltraCAR-T showed superior performance compared to conventional CAR-T in preclinical testing



- **NALM-6 tumor model in NSG MHC I/II knock out mice**
- **Single IV infusion of 5 x 10^6 CAR-T cells per mouse**

ACRONYMS: IV=intravenous; MHC=major histocompatibility complex; NSG=NOD scid gamma

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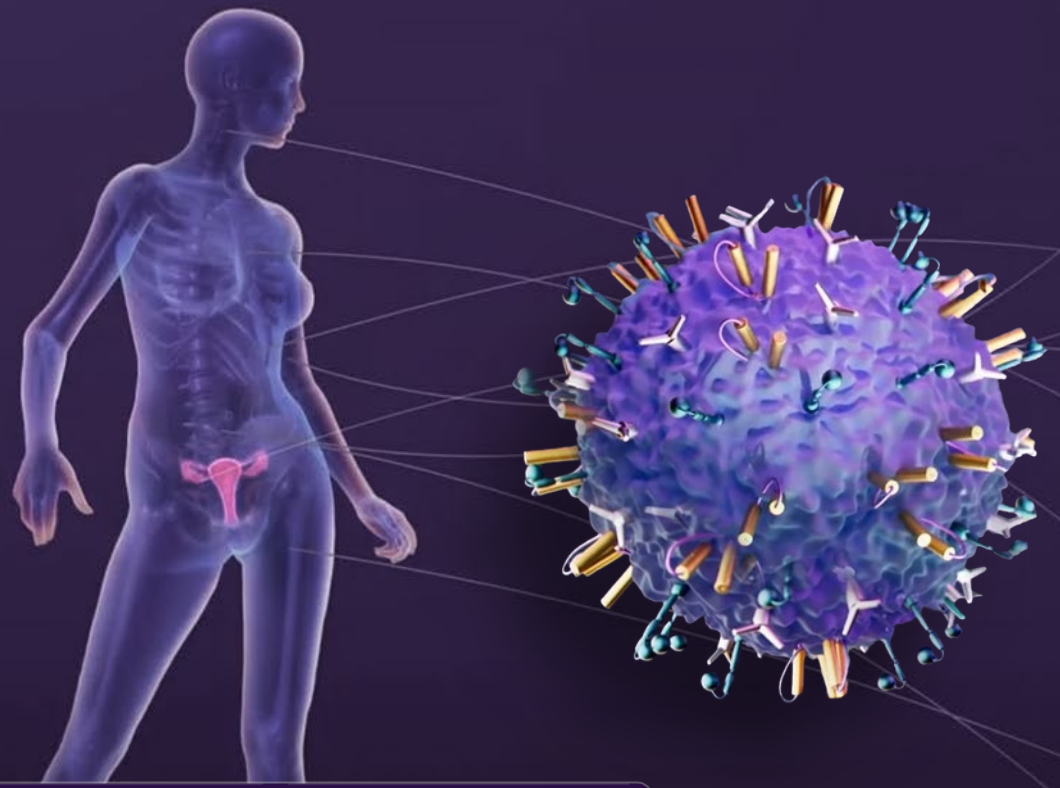
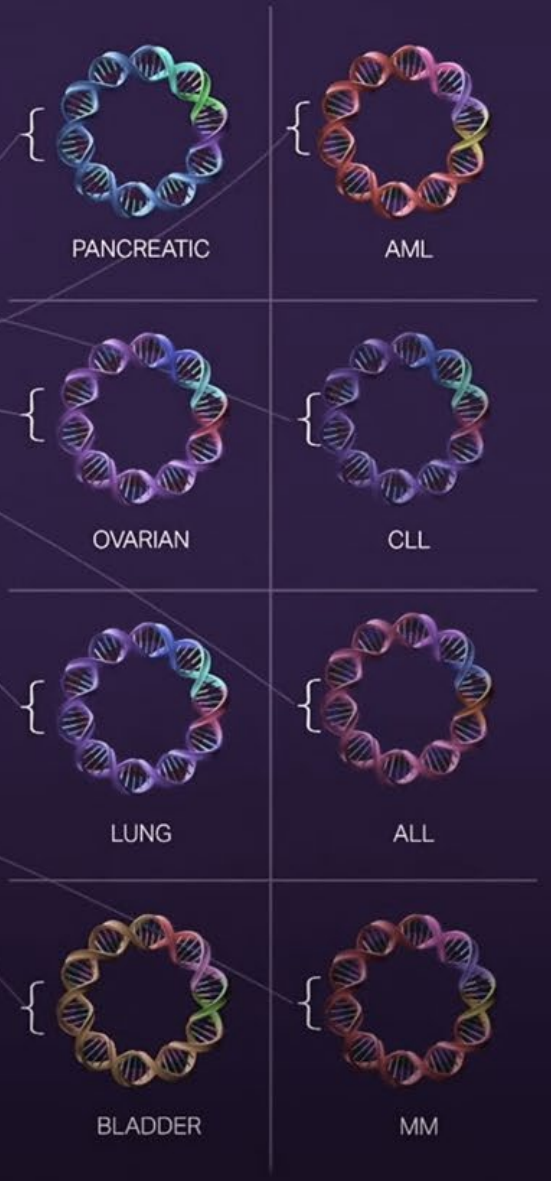
UltraCAR-T Library Approach

Precigen's Vision is to transform the personalized cell therapy landscape for cancer patients

- Select one or more UltraCAR vectors from the off-the-shelf library based on a patient's tumor
- Repeat dosing if needed



UltraVector®



Non-viral UltraCAR-T Library

Indication	Antigen 1	2	3	Indication	Antigen 1	2	3
Pancreatic	○	○		AML	○	○	
Ovarian	○	○		CLL	○	○	
Lung	○	○		ALL	○	○	○
Bladder	○	○		MM	○	○	
Others	○	○	○	Others	○	○	○

ACRONYMS: AML=acute myeloid leukemia; CLL=chronic lymphocytic leukemia; MCL=mantle cell lymphoma; ALL=acute lymphoblastic leukemia; DLBCL=diffuse large B-cell lymphoma; MM=multiple myeloma

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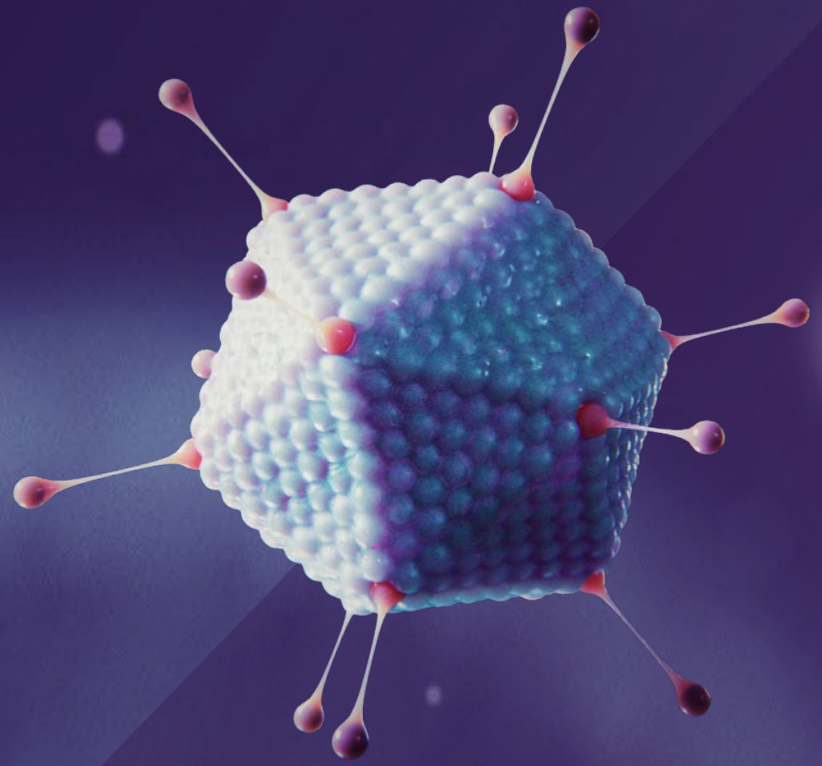

Thank You

Nasdaq: PGEN